

SFWMD Governing Board Meeting July 14, 2010



Everglades Water Quality Restoration Strategies

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Everglades Restoration & Capital Projects

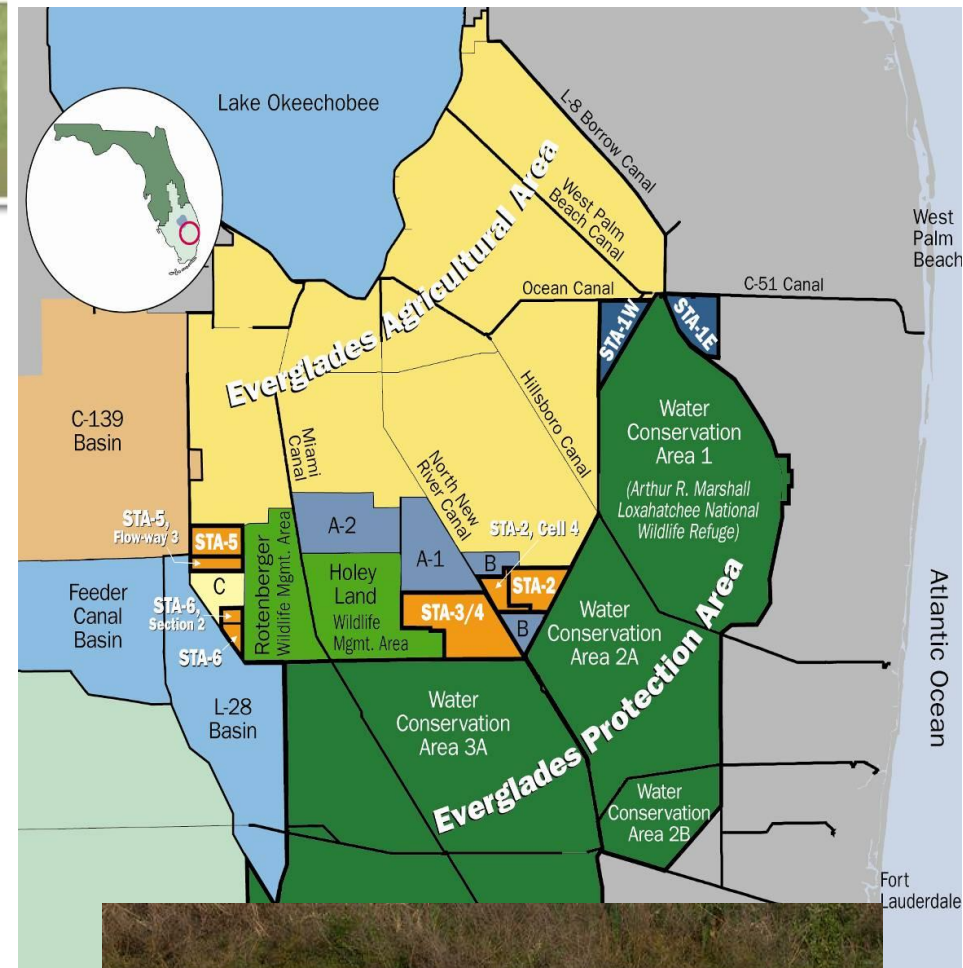


Background

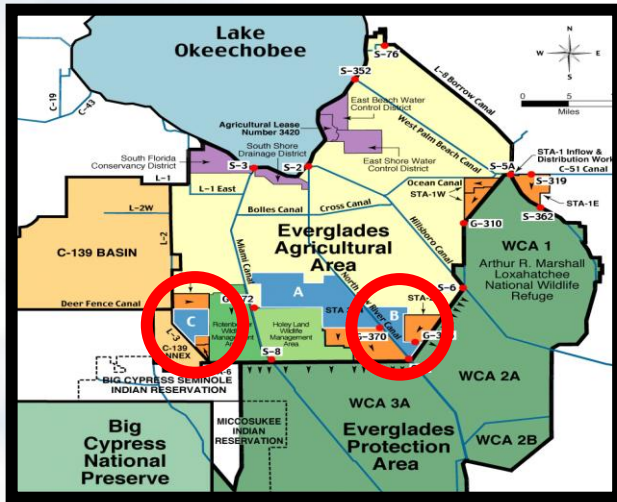
Legal Events and Planning Process

Long Term Plan

- Since 1994, more than 45,000 acres of effective treatment area of STAs constructed
 - **\$1.8 billion investment**
- An additional 11,540 acres of effective treatment areas are under construction (Compartments B and C)
 - **\$350 million investment**
- In Water Year 2010, over 1,400,000 acre-feet of water treated
 - reduced total phosphorus loads by 76%
- Combined with BMPs, prevented more than 3,500 metric tons of phosphorus from entering the Everglades to date



STA Expansion Compartment B and C Buildouts



Comp B

- Results in total effective area expansion of 16,820 acres to complement existing Everglades Agricultural Area STAs
- Compartment C design and permitting complete; construction began April 2009
- Compartment B design and permitting underway; construction began June 2009
- Construction of pump stations started September 2009



Comp C

STA Performance Data

Updated March 1, 2010 – Contains Preliminary Data

Period of Record

	STA-1E	STA-1W	STA-2	STA-3/4	STA-5	STA-6
	Sep. 2004 - May 2010	Oct. 1993 - May 2010	June 1999 - May 2010	Oct. 2003 - May 2010	Oct. 1999 - May 2010	Oct. 1997 - May 2010
Average Inflow TP (ppb)	187	173	106	119	229	98
Average Outflow TP (ppb)	64	53	23*	18	96*	35*
TP Retained (m tons)	80	446	238	381	201	56

Table contains preliminary data.

*Performance does not reflect Compartment B and C Buildouts

Loxahatchee National Wildlife Refuge (Refuge)

Water Quality Limits

- An “exceedance” is defined as 2 monthly excursions within 12 consecutive sampling events based on samples collected at the 14-station interior monitoring network
- A “violation” is an unexcused “exceedance”
- Recent violations/exceedances
 - 2009 - November 2008 (0.2 ppb) and June 09 (1.1 ppb)
 - 2004 - September 2003 (0.5 ppb) and August 2004 (2.1 ppb)

Loxahatchee National Wildlife Refuge Planning Effort

USA vs. SFWMD - Moreno

- Oct 09 - Miccosukee Tribe of Indians files Motion Seeking Declaration of Violations
- Dec 09 - In recognition of the State's admission that the 2009 exceedance in the Refuge resulted in a violation, the Settling Parties agreed to work cooperatively to identify additional strategies necessary to achieve applicable water quality requirements to the Refuge
- Jan 10 - State and Federal parties began meeting regularly in January

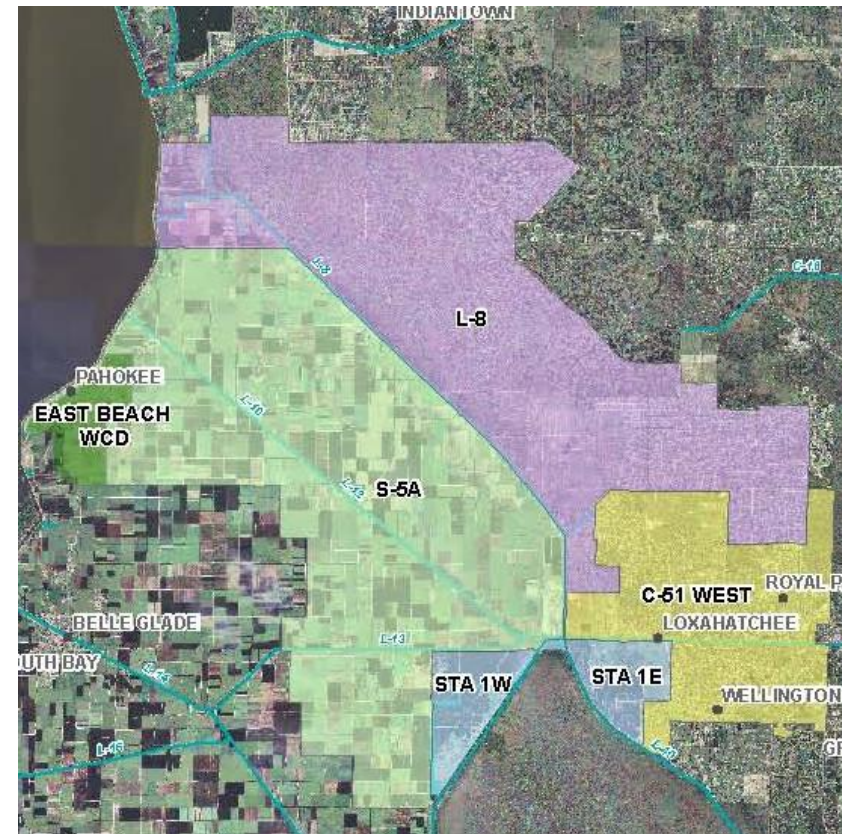
Loxahatchee National Wildlife Refuge Planning Effort

USA vs. SFWMD - Moreno

- Initial discussions focused on additional phosphorus reduction measures necessary to achieve phosphorus water quality standard for the Refuge
- Various strategies for achieving the phosphorus water quality standard are being evaluated, including source controls, expansion of STAs, and storage
- Combinations of sub-basin, basin, and regional scale projects are being considered

Loxahatchee National Wildlife Refuge Planning Effort - Basin Scale Studies

- Source control studies are underway for:
 - S-5A/East Beach Water Control District
 - C-51W/L-8
- Assess existing water quality, soil and other data and identify phosphorus sources
- Evaluate phosphorus reduction potential of various phosphorus abatement measures at farm and sub-basin scale
- Develop cost estimates and evaluate cost effectiveness of measures
- Include stakeholders



Loxahatchee National Wildlife Refuge Planning Effort - **Regional Evaluation**

- Regional scale evaluation has focused on:
 - Identifying key assumptions
 - Developing datasets
 - Developing evaluation tools and criteria
 - Evaluating potential combinations of projects



Additional Legal Rulings

- Mar 10 - Judge Moreno issues order granting motion to adopt Special Master's report; motion seeking declaration of violations; and motion for declaration of breach commitments
- Apr 14, 10 - Judge Gold issues order granting plaintiffs motions in part; granting equitable relief; requiring parties to take actions by dates certain
- Apr 28, 10 - SFWMD files 60(b)(5) motion for relief from Moreno order on remedies; and 59(e) motion for modification

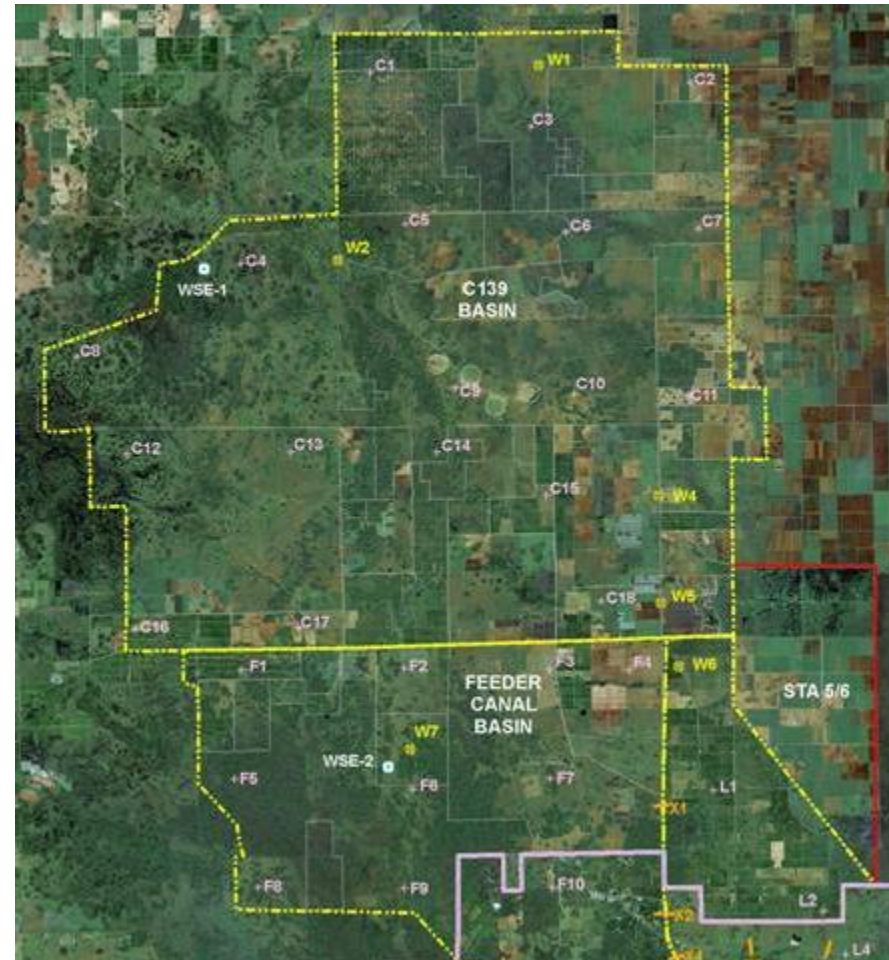
Planning Effort - Expedited Schedule

- Due to recent legal rulings, planning effort has been expanded and expedited
 - Now relates to all ECP STAs and associated NPDES Permits
- All parties to the litigation have been invited to participate
- Objective: Identify a suite of technically feasible projects to meet a long term flow-weighted mean of 11-12 ppb for total phosphorus



Planning Effort - Conceptual Plan

- Various strategies being evaluated including: source controls, expansion of STAs, storage/flow equalization, and strategic redirection
 - Evaluation of each STA complex being performed
 - C-139 Basin Study underway since 2008
- Expedited schedule is being driven by Order's requirement that EPA file an Amended Determination with the Court by September 3rd





Status of Planning Efforts

Assumptions

- Water Quality Target - Need to identify additional strategies so that each STA complex can achieve WQBEL
 - WQBEL still being derived by EPA
 - WQBEL represents statistical equivalent to 10 ppb geometric mean phosphorus criterion
 - WQBEL will include multiple parts
 - Long Term Average - e.g., 11 or 12 ppb
 - Annual Maximum - e.g., 17 or 18 ppb

Assumptions (continued)

- Water Quality Period of Record
 - 2005 - 2009; period with high concentrations
- Water Quantity
 - Approximate average annual volume of 1.5 million acre-ft to be treated
 - Original Conceptual Design treated 1.3 million acre-ft
 - Additional 200,000 ac-ft based on better model predictions
 - Period of Record – 1965 - 2005; longer period of record to capture variable flows and varied meteorological conditions

Modeling Scenarios

- Over 150 scenarios have been modeled by SFWMD to date
- Modeling scenarios are evaluating each STA complex and are evaluating-
 - STA expansions
 - Flow Equalization Basins (FEB)
 - Strategic Redirection of Flows within EAA
- Additional model runs/sensitivity analysis will be performed by both SFWMD and EPA

Considerations, Uncertainties, and Challenges

- Land Acquisition - acquisition, land swaps, condemnation
- Design - site specific issues, extreme events, hydraulics evaluation/peak flows
- Regulatory
 - NEPA
 - Endangered Species Act and Migratory Bird Treaty Act (construction and operations)
 - Permits - federal, state, and local permits for construction and operation
 - Mitigation Requirements
 - Section 408 Authorizations for C&SF Modifications

Considerations, Uncertainties, and Challenges (continued)

- Cultural Resources
- Agrichemicals and Soil Remediation
- Vegetation Grow-In and Maintenance
- CERP Coordination and Implementation
- Funding
- Litigation
- Schedule and milestones
- Ensuring flexibility

Next Steps

- Continue modeling runs and sensitivity analysis
- Conduct another planning team meeting
- Await results/information from EPA
- Update to Governing Board in August





Questions?